



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND
1100 BALCH BOULEVARD
STENNIS SPACE CENTER MS 39529-5005

NAVMETOCCOMINST 3140.14E
N3

24 SEP 2004

NAVMETOCCOM INSTRUCTION 3140.14E

From: Commander, Naval Meteorology and Oceanography Command

Subj: FLIGHT WEATHER BRIEFING MANUAL

- Ref:
- (a) OPNAVINST 3710.7(T), NATOPS General Flight and Operating Instructions
 - (b) NAVMETOCCOMINST 3141.2(A), Surface METAR Observation Procedures U.S.
 - (c) NAVMETOCCOMINST 3143.1(G), Aerodrome Forecasts
 - (d) U.S. Department of Transportation, Federal Aviation Administration, 7340.1 Contractions Handbook
 - (e) Department of Transportation, Federal Aviation Administration, 7350, Location Identifiers
 - (f) International Civil Aviation Organization (ICAO) DOC, 7910 Location Indicators
 - (g) World Meteorological Organization (WMO) Codes Manual 386
 - (h) AFI 11-202V3, General Flight Rules
 - (i) Army Regulation 95-1, Flight Regulations
 - (j) NAVOCEANO NFWB-UG-04-01 - Naval Flight Weather Briefer User's Guide

Encl: (1) Flight Weather Briefing Manual

1. Purpose. Reference (a) requires pilots to obtain a weather briefing prior to each flight. Enclosure (1) provides the procedures governing weather briefings for flights conducted under Instrument and Visual Flight Rules (IFR/VFR), to prescribe procedures to enter weather data and forecasts on the DD Form 175-1 Military Flight Briefing Form, and to promulgate standard procedures for preparing the U. S. Navy Flight Forecast Folder. This instruction also prescribes procedures pertaining to remote briefing and electronically completing the DD Form 175-1 utilizing the web-based Naval Flight Weather Briefer (NFWB). This instruction includes important revisions and should be reviewed in its entirety.

2. Cancellation. NAVMETOCCOMINST 3140.14D

3. Background. The Pilot in Command is ultimately responsible for the aircraft and the mission, and therefore must make the final decision on whether the forecasted weather is acceptable for the planned flight. An Aviation Forecaster's responsibility is also significant since his/her weather briefing and advice allow the Pilot in Command to make that decision on the safety of the flight. The forecaster must ensure every available resource (Observations, Models, Bulletins, Satellite, and Radar) is utilized in formulating the flight forecast. Although the forecaster's role is advisory in nature, he/she must be prepared to make specific



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recommendations, (e.g., recommending changes to the anticipated route, altitude, or even to delay or cancel a flight due to adverse weather conditions). Flight Weather Briefings shall be clear, detailed, and explicit, avoiding vague language that would tend to de-emphasize the critical forecast elements.

4. Definitions. Throughout this instruction, the following definitions apply:
- "SHALL" indicates a practice is mandatory
 - "SHOULD" indicates a practice is recommended
 - "MAY" indicates a practice is optional

5. Discussion. Per reference (a), the DD Form 175-1 shall be used whenever any portion of a flight path is forecasted to have Instrument Meteorological Conditions (IMC) or when requested by the pilot. This form, along with appropriate graphics, provides aviators with a detailed overview of forecasted weather conditions along a flight path. An abbreviated **VFR** Weather Briefing may be provided if existing and forecast weather for the planned route is Visual Meteorological Conditions (VMC). The Navy Flight Forecast Folder with required graphics provide the aviator a comprehensive picture, both the vertical and horizontal, of the forecasted environmental conditions. It should be provided whenever a flight transits across large continental or oceanic areas or as requested.

6. Action

a. U.S. Navy and Marine Corps Aviation Forecasters shall provide flight weather briefings in accordance with reference (a) and the instructions and procedures contained in enclosure (1). References (b) and (c) provide Navy guidance on aviation weather reporting codes. References (d) through (i) provide basic aviation abbreviations and other agency guidance on aviation weather support.

b. NFWB, a web-enabled software application, is capable of providing any of the above briefings. Forecasters shall use NFWB to conduct all DD Form 175-1 weather briefings; and should be used by aviators to the maximum extent possible to request weather briefings remotely. Technical procedures on use of NFWB are contained in reference (j). NFWB is available to provide support to naval aviation worldwide.

c. Graphics (charts, satellite and radar images) shall be used to supplement and enhance flight briefings when any significant weather is forecast whether conducted in person or via NFWB. As a minimum the forecaster should provide a presentation showing the overall weather pattern (chart and satellite) and one displaying any hazards to flight.

7. Effective Date. This instruction becomes effective 1 July 2004. The instruction incorporates policy for the new DD Form 175-1 dated October 2002, but is also applicable to all previous editions. Activities still using older editions of the DD Form 175-1 shall down-load the October 2002 edition. NFWB will incorporate the latest edition during the next build. Until that time, the previous edition of the DD175-1 provided in NFWB is authorized for use.

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8. Concurrence. This instruction has the concurrence of the Commandant of the Marine Corps. Marine Corps Aviation Support activities shall take such actions prescribed in the instruction that are not contradictory to the specifically expressed policies of the Commandant of the Marine Corps.



PETER W. FURZI
Acting

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42R Fleet Composite Squadrons
42S Air Test and Evaluation Squadrons
42T Tactical Air Control Squadrons
42U Helicopter Combat Support Squadron
42W Helicopter Mine Countermeasures Squadrons
42X Fleet Air Reconnaissance Squadrons
42Z Electronic Attack Squadrons
42BB Helicopter Anti-submarine Squadrons
42CC Helicopter Anti-submarine Squadrons Light
42DD Carrier Airborne Early Warning Squadrons
42FF Strike Fighter Weapons School
42GG Strike Fighter Squadrons

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42HH Helicopter Combat Support Special Squadron
 42RR Air Force Reserve
 42TT Fleet Maritime Patrol Mobile Operations Center
 46 Fleet Marine Force – Aviation
 46B Aircraft Wing
 46C Miscellaneous Marine Aircraft Groups
 46D All Weather Attack Squadrons/Fighter Attack Squadrons
 46F Marine Wing Communications Squadron and Detachment
 46G Wing Headquarters Squadron
 46H Transport Squadron
 46J Air Control Squadron
 46K Air Support Squadron
 46M Headquarters Logistics Squadron
 46P Helicopter Squadrons
 46Q Marine Wing Support Group (ATTN: WX Service Officer)
 46R Marine Wing Support Squadron (ATTN: WX Service Officer)
 46S Air Traffic Control Squadron
 46T Attack Training Squadron and Fighter Attack Training Squadron
 46U Marine Aviation Weapons and Tactics Squadron (ATTN: WX Service Officer)
 46V Tactical Electronic Warfare Squadron
 A3 Chief of Naval Operations (N61, N785, & N885 only)
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 C20C Research Laboratory Detachments (Monterey only)
 C40 Shore Based Detachments, Meteorology and Oceanography
 FA6 Air Station LANT
 FA9 Air Facilities LANT
 FB6 Air Facilities PAC
 FB7 Air Station PAC
 FB44 Missile Range Facility
 FC14 Air Stations Eur
 FT6 Air Stations CNET
 FD All Shore Activities under COMNAVMETOCCOM
 FF5 Safety Center
 FF42 Naval Postgraduate School
 FKA1A Air System Command
 FKA1B Space and Naval Warfare Systems Command (PMW155)
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Federal Aviation Administration (ATTN: Weather Services)
800 Independence Ave SW
Washington, D.C. 20591

HQ, Air Weather Service, Scott AFB, IL 62225-5008

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24 SEP 2004

Commander,
Naval Meteorology and Oceanography Command
Stennis Space Center, Mississippi 39529-5005



NAVMETOCOM INSTRUCTION 3140.14E

FLIGHT WEATHER BRIEFING MANUAL



September 2004

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NAVMETOC COMINST 3140.14E

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AVIATION FLIGHT WEATHER BRIEFING MANUAL

COMNAVMETOC COM INST 3140.14E

September 2004

This publication prescribes procedures for use by all Navy and Marine Corps METOC personnel when providing flight weather briefs. It is considered the governing instruction for flight weather briefing and personnel are required to follow its provisions. Supersedes COMNAVMETOC COM INST 3140.14D Released 20 May 1996

**Commander, Naval Meteorology and Oceanography
Command**

Stennis Space Center, MS 39522-5005

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Change No.	Subject	Date Entered	Entered by
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Chapter 1 - Instructions Governing Visual Flight Rules Weather Briefings

1.1 General. An abbreviated Visual Flight Rules Weather Briefing may be provided if existing and forecast weather for the planned route is Visual Meteorological Conditions (VMC). VFR weather briefs have four common formats, a DD 175 Flight Plan with a VFR stamp, a DD 175-1 Form with basic information and the words VFR entered across the Part II, a general area Canned Route WEB posted brief, and a locally prepared form. Paragraph 4.6.3.2 of reference (a) states: "If the intended VFR flight plan includes a mission (e.g., Olive Branch) or an air field with VFR minimums higher than the basic VFR 1000-foot ceiling and 3-statute-mile visibility, it is the responsibility of the pilot to advise the Aviation Forecaster of the higher minimums". All of these briefs can be done remotely (NFWB, FAX, etc) as well as in person.

1.2. VFR Certification Stamp. For this brief, the pilot simply provides the DD 175 Flight Plan to the forecaster. The forecaster then places a VFR Certification Stamp on the form and enters the data required per paragraph 1.5.

NFWB NOTE: NFWB provides VFR Certification Stamp briefings in the format of a locally prepared form.

1.3 Abbreviated DD 175-1 Form. For this brief, the pilot provides the DD 175 Flight Plan and the forecaster completes only the limited entries on the DD 175-1 form as described in "paragraph 1.5" below. This method allows the forecaster to provide additional information such as destination weather if desired by the pilot

1.4 Canned (or Stereo) Routes. Canned Routes are routinely used routes of flight, often established by name. An approved Canned Route may be used in lieu of a DD 175 Flight Plan provided the point of departure is a military facility and the Canned Route flight plan conforms to the agreement of the parent Air Route Traffic Control Center (ARTCC). Pre-defined Canned Route weather briefings are an acceptable alternative only for VMC flights when Visual Flight Rules apply. They cannot be used for IFR or marginal VFR flights. Paragraph 4.6.3.2 of reference (a) states: "Pilots planning to fly Canned Routes shall consult their local forecast activity to verify acceptable weather conditions.

NFWB Note: NFWB provides Canned Route weather briefings in a format that is similar to the DD Form 175-1. The forecaster must select the "suspend" radio button to prevent the use of a Canned Route briefing when that route's conditions become IFR or marginal.

1.5 Policy. All activities shall complete VFR briefings in accordance with reference (a) and the procedures set forth in this instruction:

1.5.1 VFR Minimal Information. Regardless of the VFR format used, with the exception of Canned Route briefs, the following minimum information must be recorded on DD 175 Flight Plan or DD 175-1 if used:

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- 1.5.1.1 Date/time (UTC) of the brief preparation/posting;
- 1.5.1.2 VFR briefing number (month and sequential number);
- 1.5.1.3 A/C type, call sign, BUNO, event number;
- 1.5.1.4 Departure point/ETD;
- 1.5.1.5 Flight level and winds;
- 1.5.1.6 Destination and intermediate stops;
- 1.5.1.7 Description of any hazards (i.e., AIRMETS, LLWS, etc.) along the route of flight;
- 1.5.1.8 Briefing void time; and
- 1.5.1.9 Forecaster's name.

1.5.2 VFR Stamp Information. Pilots who file VFR flight plans and present a DD-175 Flight Plan to the forecaster may receive a VFR Certification Stamp briefing if the pilot so requests and VFR criteria can be maintained throughout the flight. Otherwise, a completed DD Form 175-1 shall be provided. The VFR Certification Stamp is placed on the actual DD 175 Flight Plan. Activities utilizing VFR Certification Stamp briefings shall ensure the stamp, as a minimum, contains the following information:

<p>Brief Time: _____ Brief NO: _____</p> <p>"Briefing Void _____ Z, Flight as planned can be conducted entirely under Visual Flight Rules. Verbal briefing given and hazards explained. No SIGMETS or WW's exist. Following AIRMETS or other warnings are known to be currently in effect along planned route of flight":</p> <p>FLT LVL Winds: _____</p> <p style="text-align: right;">_____ (Signature of Forecaster)</p>

1.5.3 IFR Flight Plans for VFR Conditions. Pilots filing IFR Flight Plans shall be given a completed DD Form 175-1 even though VFR criteria could be maintained.

1.5.4 Combination Flight Plans. Pilots filing a combination flight plan (VFR/IFR) shall be given a completed DD Form 175-1. Use of a VFR Certification Stamp briefing is not authorized for combination flight plans.

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1.5.5 Canned Route Data Minimums. Activities utilizing Canned Route weather briefings shall display as a minimum, graphics illustrating visibility, cloud extent, ceilings as well as any WW's, SIGMETS and/or AIRMETS. NFWB shall provide links to these graphics.

1.6 Records. An accurate record shall be maintained of all VFR briefings provided. Copies of all briefs shall be maintained for one month. Briefs that relate to an aircraft incident shall be retained locally until no longer required; a copy of the brief shall be included with the accident report and retained by the Navy Safety Center. Additionally, retrieve and save any available data used (alphanumeric and graphical) in the preparation of briefings related to an aircraft mishap.

1.6.1 Records for VFR Certification Stamp briefings shall consist of any of the following: a photocopy of the DD-175 Flight Plan, a completed DD Form 175-1 or a locally prepared form showing the completed VFR Certification Stamp.

1.6.2 NFWB Records. The NFWB system retains all individual and Canned Route VFR briefings on file for 31 days, which fulfills the requirement to retain all briefings locally for a period of 1 month. The NFWB administrative applications provide the capability to retrieve all archived briefings and compile station statistical reports as required.

1.7 Void Times. Refer to paragraph 2.6.5 of Chapter 2 of this instruction.

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Chapter 2 - Instructions Governing Instrument Flight Rules Weather Briefings, and Preparing the DD Form 175-1 Military Flight Weather Briefing

2.1 General. The DD Form 175-1 shall be completed for all IFR Flight Plans and VFR Flight Plans presented if IFR conditions are forecasted in route. The DD Form 175-1 is a fine scale forecast (both time and space); therefore, entries must be as precise as possible. Entries on the DD Form 175-1, or equivalent briefing form, must be horizontally and vertically consistent and show sound meteorological reasoning. For example, if a weather warning or advisory for surface wind is indicated in the local weather watch/warning block, the surface wind forecast in block 9 should reflect the warning or advisory wind criteria, along with the warning or advisory number entered in take off remarks. Unless otherwise specified in reference (a), the following rules shall apply to all entries on the DD Form 175-1:

2.1.1 Time Standards. All times and dates shall be entered in UTC (Z).

2.1.2 Height Standards. All heights shall be entered to the nearest hundred feet above Mean Sea Level (MSL) in three digits (e.g., 800 feet above MSL recorded as 008, 1,200 feet above MSL recorded as 012, and 15,000 feet above MSL recorded as 150). Exception: "Cloud layer and Minimum Ceiling" are entered in hundreds of feet Above Ground Level (AGL).

2.1.3 Wind Standards. All wind directions and speeds shall be five digit entries of tens of degrees true and whole knots unless the wind exceeds 100KTS, in which case wind speed shall be entered in six digits. Forecasters must be prepared to provide station magnetic wind corrections or winds in degrees magnetic upon request.

2.1.4 Code Format. Observations and Terminal Forecasts shall be entered in METAR/TAF code format. Instructions on METAR and TAF are contained in references (b) and (c). Visibility shall be entered in Statute Miles (SM) in CONUS and Meters OCONUS. A limited set of terms and abbreviations are given in Appendix B.

2.1.5 Graphics. Computer generated graphics (e.g., VWD, HWD, other model data, satellite images, and Doppler Radar images), shall be used to the maximum extent possible to illustrate the complete environmental situation to the pilot. The forecaster shall call the pilot's attention to these graphics as needed when briefing the DD Form 175-1.

2.1.6 Abbreviations. The most common abbreviations used in this instruction are listed in Appendix B. The complete set of approved abbreviations and contractions is available in reference (d). Location Identifiers/Indicators are contained in references (e) and (f).

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2.2 Part I - Takeoff Data. This section identifies the flight for which the form is being prepared and provides forecasted conditions for takeoff and climb to flight level, for the Estimated Time of Departure. Runway temperature, dewpoint temperature, temperature deviation, pressure altitude, and density altitude values are not mandatory for fixed wing aircraft unless the pilot or the person receiving the briefing specifically requests the information. See figure 2-1.

USAF Note: For USAF Aviators, provide takeoff forecast data valid for one hour either side of the estimated time of departure.

NFWB NOTE: Pilots at remote sites may not have continuous weather displays available. Forecasters shall insure pilots view the pilot/FDO links pertaining to their mission. As a minimum forecasters shall make available the following products as pilot/FDO links:

WW display for any severe thunderstorms and tornado activity.

SIGMET display for areas of significant icing and/or turbulence.

Convective SIGMET display for any areas of significant convective activity.

Doppler reflectivity for any thunderstorm activity.

Satellite imagery as needed to illustrate any hazardous phenomena.

FLIGHT WEATHER BRIEFING							
PART I - TAKEOFF DATA							
1. DATE 16 NOV 03	2. ACFT TYPE/NO. P3 LL25	3. DEP PT/ETD NGU 1820	4. RWY TEMP 10 °C	5. DEWPOINT 8 °C	6. TEMP DEV -5	7. PRES ALT -85 F	8. DENSITY ALT 678 F
9. SEC WIND 12008	10. CLIMB WINDS 14020---22050	11. LOCAL WEATHER WATCH/WARNING/ADVISORY THUNDER II				12. RSC/RCR WET	
13. REMARKS/TAKEOFF ALTN FCST LGT MIXED ICE 080-150 DURGC							

Figure 2-1, Part I - Takeoff Data

2.2.1 Date. Enter the day, the month (first three letters), and the last two digits of the year (dd mm yy).

2.2.2 ACFT Type/No. Enter aircraft type and the bureau number (BUNO), radio call sign or event number, or the last three digits of the tail number (e.g., FA-18/BUC34, P3/OL175, etc...). If the flight includes more than one aircraft, enter that additional data in the takeoff remarks block.

2.2.3 DEP PT/ETD. Enter the departure location's International Civil Aviation Organization (ICAO) four letter station indicator or FAA three letter identifier and the ETD UTC. (e.g. NIP/1430, KNZY/1645, etc...). References (e) and (f) list all identifiers.

2.2.4 RWY Temp. Enter the forecast runway temperature in either degrees °C or °F. Prefix a " - " to indicate a negative reading.

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2.2.5 Dewpoint. Enter the forecast runway dewpoint temperature in either °C or °F. Prefix a “-” to indicate a negative reading.

2.2.6 Temp Dev. Enter in degrees Celsius or Fahrenheit the temperature deviation from the standard atmosphere temperature. This value is the absolute difference between the standard and the forecast temperatures. Assign a negative value if the forecast temperature is below the standard and a positive value if it is above the standard. (Example: Station A is at 1300 ft above sea level. Standard atmosphere temperature at 3000 ft is 9 °C. Forecasted runway temperature is -2 °C. Therefore the temperature deviation is -11 °C.)

2.2.7 Pres Alt. Enter in feet prefixed by a + or - as applicable.

2.2.8 Density Alt. Enter in feet prefixed by a + or - as applicable.

2.2.9 SFC Wind. Enter the three digit forecast surface wind in true direction (magnetic direction when requested, designating M for magnetic). Enter surface wind speed in knots (to include gusts if applicable) in two digits. Ensure wind entries use a minimum of five digits (three for direction and two for speed) valid for ETD. Enter VRB for variable winds and CALM when winds are forecast to be calm.

2.2.10 Climb Winds. Enter the three digit forecast climb wind direction in degrees true to the nearest 10 degrees. Enter the climb wind speed in knots in two or three digits to the nearest 5 knots. Climb wind should represent the winds from surface to cruise altitude. The entry may be a single value from take-off to top of climb in simple scenarios, but may require multiple entries if there are significant differences.

USAF NOTE: For USAF flights, wind directions shall be entered in degrees Magnetic for missions departing your airfield, and in degrees True for missions departing another airfield. Designate “M” for magnetic or “T” for true.

2.2.11 Local Weather Watch/Warning/Advisory. Enter any known or forecast weather watches, warning, or advisory valid for ETD. If no watches, warnings or advisories are forecast to be in effect, then “NONE” shall be entered.

2.2.12 RSC/RCR. Enter the latest Runway Surface Condition/Runway Condition including decelerometer reading for the departure airfield as reported by ATC. (e.g. WR//, RCRNR, PSR10, IR03, DRY, etc...). Enter N/A if not available.

2.2.13 Remarks/Takeoff Altn Forecast. Enter remarks on weather that will effect takeoff and climb (e.g., inversions, icing, turbulence, and low-level wind shear). Enter take-off alternate forecast when departure field is forecasted to have conditions below field minimums or when requested. Per figure 4-1 of reference (a) if departure field is forecasted to be below minimums, alternate must be forecast to have a ceiling of 3000 ft and visibility of 3SM or better.

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2.3 Part II – Enroute & Mission Data. Enter weather information applicable to the route of flight for the duration of the specific mission; (figure 2-2). Weather phenomena within a minimum of 25 Nautical Miles (NM) either side the intended route of flight and surface to 5000 feet above the flight level. (Exception: Pilots shall be made aware of ALL thunderstorm activity along the intended route of flight regardless of flight level). Enter locations using standard geographic locations and ICAO identifiers or Lat/Lon, i.e. NHZ-40N65W-ORF). Do not use "ENROUTE" to identify location of phenomena in Part II; however, in addition to any entries in Part II noting a WW, SIGMET or other bulletin warning of severe weather, the entry "**Severe Weather Enroute**" shall be made in Part IV remarks section. The lack of any flight hazard bulletin does not preclude the forecaster from making entries on hazards based on individual forecaster observation or reasoning. Additional information may be included if the forecaster considers it significant or of value to the pilot. Graphical presentations to include Wind Charts, Computer flight plan, Vertical Weather Depiction, and Horizontal Weather Depictions may augment or be substituted for any or all of Part II data with the exception of Severe Weather annotations. If such graphics are used the words "see attached" may be written in the applicable blocks. Appendix A provides details on severe weather bulletins issued by the NWS.

USAF Note: USAF Aviators are briefed only on weather within 25NM and 5000ft above and below their planned flight level.

PART II - ENROUTE & MISSION DATA											
14. FLT LEVEL/WINDS/TEMP		<input checked="" type="checkbox"/> SEE ATTACHED		15. SPACE WEATHER				16. SOLAR/LUNAR		LOCATION	
250 NGU--JFK 260 -52 JFK--NHZ 23095 -56								SWNT 1058 Z			
				FREQ				OR 1113 Z		VR 0123 Z	
				GPD				DD 2215 Z		VB 0820 Z	
				RAD				EBNT 2332 Z		LV 70 H	
17. CLOUDS AT FLT LEVEL				18. OBSCURATIONS AT FLT LEVEL RESTRICTING VISIBILITY							
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IN AND OUT				YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> TYPE							
19. MINIMUM CEILING - LOCATION				20. MAXIMUM CLOUD TOPS - LOCATION				21. MINIMUM FREEZING LVL - LOCATION			
020 VA-DE FT AGL				270 VA FT MSL				5FC ME FT MSL			
22. THUNDERSTORMS			23. TURBULENCE			24. ICING			25. PRECIPITATION		
CHART CON SIGMET 34E			CHART SIGMET ROMEO 2			CHART			CHART		
NONE <input checked="" type="checkbox"/> AREA <input type="checkbox"/> LINE <input type="checkbox"/>			NONE <input type="checkbox"/> IN CLEAR <input type="checkbox"/> IN CLOUD <input type="checkbox"/>			NONE <input type="checkbox"/> RIME <input type="checkbox"/> MIXED <input type="checkbox"/> CLEAR <input type="checkbox"/>			NONE <input type="checkbox"/> DRIZZLE <input type="checkbox"/> RAIN <input type="checkbox"/> SNOW <input type="checkbox"/> PELLET <input type="checkbox"/>		
ISOLATED 1-2%			LIGHT			TRACE			LIGHT		
FEW 3-15%			MODERATE			LIGHT			MODERATE		
SCATTERED 16-45%			SEVERE			MODERATE			HEAVY		
NUMEROUS - MORE THAN 45%			EXTREME			SEVERE			SHOWERS		
HAIL, SEVERE TURBULENCE & ICING, HEAVY PRECIPITATION, LIGHTNING & WIND SHEAR EXPECTED IN AND NEAR THUNDERSTORMS				LEVEL 220-280				LEVEL 080-150			
LOCATION EVA				LOCATION NG--ME				LOCATION VA--MD			
								ON APPROACH ME			

Figure 2-2. Part II – Enroute and Mission Data

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NFWB NOTES: Although graphics can not be attached to a NFWB briefing, the forecaster can direct, and the pilot can review any number of graphics via the links provided in NFWB. The forecaster shall retain a printed copy of any graphics used in lieu of Form 175-1 entries. The "**Severe Weather Enroute**" radio button shall be selected when severe weather is forecasted and entered in Part II. This option annotates "Severe Weather Enroute" to Part IV, Remarks. When "Severe Weather Enroute" is selected, forecasters shall verbally brief the Pilot-in-Command of significant weather along the route of flight. When severe weather enroute is anticipated, forecasters shall select the "This brief has problems and pilot needs to contact the FDO" radio button also.

2.3.1 Flt Level/Winds/Temp. Enter planned flight level(s) in hundreds of feet Mean Sea Level (MSL) in three digits (e.g., "280" for 28,000 feet, "080" for 8,000 feet). Enter true wind direction at flight level in tens of degrees and speed to the nearest 5 knots. Enter forecast flight level temperature in degrees Celsius (prefix a "-" if the temperature is negative). If there are significant wind speed and direction changes, break the forecast into legs, otherwise, brief a representative wind and temperature for the entire route. Check the "see attached" box if the pilots receives a hard copy of wind graphics.

2.3.2 Space Weather. (Optional for Navy/Marine Corps) Check the appropriate block indicating the Frequency (FREQ), Global Positioning System (GPS), and Radiation (RAD) as applicable to the specific mission. Indicate the boundaries of the degradation in the space provided in block 15, (e.g., UHF 20N180W to Paya Lebar). When using the High Altitude Radiation Dosage Chart, 10.0 to less than 100.0 millirems per hour constitute marginal and 100.0 millirems per hour and greater constitute severe.

2.3.3 Solar/Lunar. (Optional for Navy/Marine Corps) Enter the location specified by the aircrew, Begin Morning Nautical Twilight (BMNT), Sunrise (SR), Sunset (SS), End Evening Nautical Twilight (EENT), Moonrise (MR), Moonset (MS), and Percent Moon Illumination (ILLUM).

2.3.4 Clouds at Flt Level. Check appropriate block. "Yes" implies flight in cloud at least 45 percent of the flight time; "No" implies the flight will be in cloud less than 1 percent of the flight time; and "In and Out" implies the flight will be in cloud between 1 percent and 45 percent of the flight time.

2.3.5 Obscurations at Flt Level (Outside of clouds) Restricting Visibility. Check the appropriate block. If "Yes," enter the type of forecast obscurations that could potentially restrict the in-flight visibility along the planned route or mission flight level (e.g., fog, haze, smoke, etc.). Specify the intensity (minimum visibility) and location if applicable.

2.3.6 Minimum Ceiling. Enter the lowest ceiling along the route of flight in hundreds of feet Above Ground Level (AGL), and the geographical location (e.g., 060 NIP-NGU). If the minimum ceiling is over hilly or mountainous terrain, or in thunderstorms, so indicate (e.g., 010 BOSTON MTS or 020 SW KY TSTMS, etc.). If there is an applicable AIRMET associated with the phenomena enter the name and number

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2.3.7 Maximum Cloud Tops. Enter the forecast maximum tops of significant clouds (not associated with thunderstorms) along the intended route of flight and indicate their locations in hundreds of feet above Mean Sea Level (MSL). For example, if the flight level is 16,000 feet, then the tops of middle or low clouds should be entered rather than the tops of a cirrus layer. The exception is that an aircraft involved in celestial navigation flights may be concerned with the maximum cloud tops above the flight level, which may be an obscuring cirrus layer.

USAF NOTE: For USAF flights enter maximum tops of cloud layers (not associated with thunderstorms) with more than 4/8 coverage in hundreds of feet above MSL and the geographical location.

2.3.8 Minimum Freezing Level. Enter the height and geographical location of the lowest freezing level in hundreds of feet MSL. If the lowest freezing level is at the surface, enter "SFC" and geographical location.

2.3.9 Thunderstorms. Enter the name and number or DTG of any thunderstorm product used (WW, CONVECTIVE SIGMET, etc.) Enter the type, extent (Maximum percent of instantaneous coverage) maximum tops, and geographical location of thunderstorms. Pilots shall be made aware of ALL thunderstorm activity along the intended route of flight regardless of intended flight level. Enter "Severe Weather Enroute" in part IV whenever severe thunderstorms or tornadoes are forecasted enroute.

2.3.9.1 Chart. Enter the name of any thunderstorm warning as follows:

2.3.9.1.1 Weather Watch (WW's). Write the number assigned to the specific Weather Watch "WW" that is affecting the route of flight (i.e., WW 284). Do not use "WT" or "WS" or other non-standard designation since it is not a standard identifier for Severe Weather outlined in reference (a). "**WW**" is the standard bulletin identifier for a WEATHER WATCH, issued for areas where conditions are favorable for development of severe thunderstorms or tornadoes. It is predictive in nature and should not be confused with tornado or severe thunderstorm warnings which are issued after the events have been visually or remotely observed. See Appendix A for further details on severe weather bulletins.

2.3.9.1.2 Convective SIGMET. Write "CON SIGMET" and the number assigned to the specific Convective SIGMET that is affecting the route of flight (e.g., CON SIGMET 34E). Do not use "WST" on a DD Form 175-1.

2.3.9.1.3 Graphic or Foreign forecast bulletin. Enter the name, number and/or DTG.

2.3.9.2 Type. Check the box that best describes the thunderstorm area forecasted:

2.3.9.2.1 None. Check this block only when there is no thunderstorm activity forecast along the entire route of flight

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2.3.9.2.2 Area. Check this block when the forecast thunderstorm activity will be of air mass variety or will occur in clusters.

2.3.9.2.3 Line. Check this block when the forecast thunderstorm activity will form a line (e.g., frontal, squall, and/or orographically induced convective activity).

2.3.9.3 Coverage. Check the box that best describes the maximum instantaneous coverage forecasted for each area of thunderstorms and to the right enter the maximum tops.

2.3.9.4 Location. Enter the location(s) of thunderstorm using standard geographic locations and ICAO identifiers, or LAT/LONG combinations to clearly define affected areas. If several coverage boxes are checked, use different annotation marks to distinguish the separate areas of thunderstorm activity. Describe the separately checked coverage areas in the location box and annotate appropriately.

NFWB NOTE: When the severe weather enroute includes tornadic activity or severe thunderstorms, forecasters using NFWB shall select the "Pilot must call for brief number or FDO initials" radio button located in the brief completion area.

2.3.10 Turbulence. (Not associated with thunderstorms.) Enter the name, number or date/time group of any turbulence forecast product used (e.g., SIGMET, AIRMET, Foreign Flight Advisories, etc) Enter the type, intensity, levels, and locations of turbulence affecting the route or specific mission. If severe or extreme turbulence is forecasted, enter "Severe Weather Enroute" in Part IV.

2.3.10.1 Chart. Indicate if any turbulence warning product is available as follows:

2.3.10.1.1 Sigmat. Write "SIGMET" and the phonetic word assigned to the SIGMET which affects the route (e.g. SIGMET Romeo 2)

2.3.10.1.2 Airmet. Write "AIRMET" and the phonetic word assigned to the specific AIRMET which is affecting the route of flight (e.g. AIRMET Tango).

2.3.10.1.3 Graphic or Foreign forecast bulletin. Enter the name, number and/or DTG.

2.3.10.2 Type and Intensity: Check the appropriate type and boxes.

2.3.10.3 Levels. Enter the range of altitudes in hundreds of feet for which the turbulence is forecasted (e.g. 120 - 240).

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2.3.10.4 Location. Enter the location(s) of turbulence using standard geographic locations and ICAO identifiers, or LAT/LONG combinations to clearly define affected areas. If several coverage boxes are checked, use different annotation marks to distinguish the separate areas of turbulence activity. Describe the separately checked coverage areas in the location box and annotate appropriately.

2.3.11 Icing. (Not associated with thunderstorms.) Enter the name, number or date/time group of the icing forecast product used (e.g., SIGMET, AIRMET, Foreign Advisory, etc...). Enter the type, intensity, levels, and locations of icing affecting the route or specific mission. If severe icing is forecasted, enter "Severe Weather Enroute" in Part IV.

2.3.11.1 Chart. Indicate if any icing warning product is available as follows.

2.3.11.1.1 Sigmet. Write "SIGMET" and the phonetic word assigned to the specific SIGMET which affects the route of flight (e.g. SIGMET ROMEO 2).

2.3.11.1.2 Airmet. Write "AIRMET" and the phonetic word assigned to the specific AIRMET which is affecting the route of flight (e.g. AIRMET TANGO).

2.3.11.1.3 Graphic or Foreign forecast bulletin. Enter the name, number and/or DTG.

2.3.11.2 Type and Intensity. Check the appropriate type and boxes.

2.3.11.3 Levels. Enter the range of altitudes in hundreds of feet for which the icing is forecasted (i.e., 080-120).

2.3.11.4 Location. Enter the location(s) of icing using standard geographic locations and ICAO identifiers, or LAT/LONG combinations to clearly define affected areas. If several coverage boxes are checked, use different annotation marks to distinguish the separate areas of icing activity. Describe the separately checked coverage areas in the location box and annotate appropriately.

2.3.12 Precipitation. (Not associated with thunderstorms.) Enter the type, intensity, character, and geographical location of precipitation areas affecting the route of flight. This block is for precipitation encountered at flight level, not at the surface, however departure and descent should be considered. Freezing precipitation of any intensity shall be considered a severe weather hazard and requires the note "Severe Weather Enroute" in Part IV.

2.3.12.1 Type and Intensity. Check the appropriate type and intensity boxes.

2.3.12.2 Location. Enter the location(s) of precipitation using standard geographic locations and ICAO identifiers, or LAT/LONG combinations to clearly define affected areas. If several coverage boxes are checked, use different annotation marks to distinguish the separate areas of precipitation activity. Describe the separately checked coverage areas in the location box and annotate appropriately.

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USAF NOTE: Forecasters shall provide USAF aviators with information on AFWA/OWS – “In-Flight Weather Advisories”. These products, like all weather data, must be carefully evaluated and tempered with other real-time data (e.g., observations, radar, PIREPs, upper air soundings, etc.) to determine the potential effects on the specific mission and aircraft. Even if not used as the basis for the forecast, weather personnel must alert USAF aircrews to all existing In-Flight Weather Advisories that affect their mission. If the weather briefer disagrees with the advisory, annotate the fact in the “Remarks” section of the 175-1 or equivalent. Whether or not the condition described is potentially hazardous to a particular flight is for the pilot to evaluate based on experience, the mission, and the operational limits of the aircraft.

2.4 Part III – Aerodrome Forecasts. Enter the worst conditions forecasted to prevail and any TEMPO periods during the valid time for destinations and alternates. As a starting point, forecasts for destinations and alternates shall be derived from the issued TAF. Actual forecasts entered are the sole responsibility of the forecaster completing the DD 175-1. (For Example: if the flight is due to arrive at the destination at 1400, and the destination is forecasted to have “008 overcast TEMPO 002 overcast until 1400” and “020” overcast TEMPO “010” overcast from 1400 to 1600; the forecaster shall (if he/she agrees with the forecast) enter the 008 overcast TEMPO 002 because of the requirement to forecast one hour either side of arrival time.) If the flight involves multiple stops, enter forecasts for each and alternates as needed, but advise the pilot that updates should be obtained. Forecasters must convert other agencies’ Terminal Forecast unique terminology and modifiers to Navy standard terminology (i.e. PROB to TEMPO, CAVOK to CLR and 7, etc.). See Reference (g) for further guidance. (See figure 2-3)

2.4.1. Alternate requirements are based on the lowest forecasted predominant or TEMPO ceiling and visibility conditions; therefore, for Navy flights if a prevailing or TEMPO, line is forecast to be less than 3000 and 3, an alternate is required. If any of the forecasted weather is below “field minimums,” a 3000 and 3 or better alternate is required as per reference (a); accordingly the forecaster must know the destination field minimums. If the forecaster does not know the destination field minimums, he/she should ask the pilot. Forecasters must not only be familiar with alternate requirements in reference (a) but also references (h) and (i). Brief destination forecasts in terms the aircrew understands and prefers

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PART II - Aerodrome Forecasts							
26.	27. VALID TIME	28. SFC WIND	29. VSBY/WEA	30. CLOUD LAYERS	31. ALTIMETER	RVY TEMP	PREC ALT
DEST/ALTN KNHZ	Z TO 1920 2120	00000 V T	7	SCT020 BKN070 OVC120	30.00 NS	*F/C -1	*T -50
DEST/ALTN TEMPO	Z TO T	V T	25H5N	OVC020	NS	*F/C	*T
DEST/ALTN KPAW	Z TO 1935 2135	12005 V T	7	BKN020 OVC070	29.98 NS	*F/C 0	*T -45
DEST/ALTN TEMPO	Z TO T	V T	35H5N	OVC020	NS	*F/C	*T
DEST/ALTN	Z TO T	V T			NS	*F/C	*T
DEST/ALTN	Z TO T	V T			NS	*F/C	*T
DEST/ALTN	Z TO T	V T			NS	*F/C	*T
DEST/ALTN	Z TO T	V T			NS	*F/C	INS

Figure 2-3, Part III Aerodrome Forecasts

2.4.2 Dest/Altn. Enter the appropriate station's four letter International Civil Aviation Organization (ICAO) indicator for the destination (DEST), intermediate stops and/or alternate (ALTN) in chronological order. Designate DEST or ALTN used by crossing out the one not applicable. Place any conditions described by a TEMPO group on the next line; line through ~~DEST/ALTN~~, and enter TEMPO in the block.

NFWB Note: Forecaster must only select DEST or ALTN radio button when using NFWB, no line out required. TEMPO groups are placed within the same field as the DEST or ALTN weather. This is accomplished by selecting ENTER in the preferred block to drop to a new line within the block. Next, enter the word TEMPO along with the forecast data for the appropriate blocks (See Figure 2-4). NFWB briefings also have an option to indicate aerodrome forecasts for Information (INFO) purposes if requested by the pilot.

ICAO	CLOUDS	VSBY/WEA	SFC WIND	ALTIMETER
KSF0	SBC TEMPO BKN020	7 4E-	16008	2991INS
<input checked="" type="radio"/> DEST				ETA m/d/yy HHmm
<input type="radio"/> ALTN	Route			10/15/03 0010
<input type="radio"/> INFO				

Figure 2-4, NFWB Aerodrome Forecast Entry

USA Note: For Army multi-stop missions, where the forecast for all stops is similar, enter "A/S" (for "all stops"), enter the worst conditions expected along the route and identify the location having the worst conditions. These entries imply conditions for all other stops are the same, or better. Army missions require a valid time from ETA through 1 hour after ETA only.

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2.4.3 SFC Wind. Enter wind direction in degrees true. Enter the wind direction to the nearest 10 degrees, and speed (including gusts) to the nearest whole knot. Enter magnetic direction upon request and designate M for magnetic. If winds are forecasted to be calm enter 00000KT.

USAF Note: If the flight departs from and terminates at your own airfield with no intermediate stops, enter the wind direction magnetic. For "A/S" missions enter the highest wind speed expected (including gusts) and the location.

2.4.4 Vsby/Wea. Enter the lowest prevailing visibility forecast for the valid period (prevailing and TEMPO, if required) in statute miles (SM). TAFs expressing visibility in meters must be converted to SM. Visibility may be entered in meters at the request of the pilot. Enter the FAA approved abbreviation for the forecasted weather, reference (d) applies. If there is any doubt as to the meaning of the abbreviation, spell out the phenomena.

2.4.5 Cloud Layers. Enter the lowest prevailing cloud conditions forecasted during the valid time (Prevailing and TEMPO if required). Forecasters must fully evaluate all weather agencies' probability groups and indigenous variations of the TAF code. If necessary, use the "Remarks" section to record the forecaster's assessment of these conditions.

2.4.6 Altimeter/RWY Temp/Pres Alt. Enter the lowest forecast altimeter setting for the valid period in inches of mercury. If requested enter runway temperature and pressure altitude.

2.5. Part IV - Comments / Remarks. This part is used for a variety of miscellaneous comments and for any significant environmental data not previously entered, (figures 2-5).

PART IV - COMMENTS/REMARKS							
32. BRIEFED RSC/RCR	<input checked="" type="checkbox"/>	YES	NOT AVAILABLE	33. PMSV 343.7	34. ATTACHMENTS	YES	<input checked="" type="checkbox"/> NO
35. REMARKS SEVERE WEATHER ENROUTE KNHZ 1800Z 29003 7SM OVC070 00/-01 A3004 LSR20P							

Figure 2-5. Part IV - Comments/Remarks

2.5.1. Briefed RSC/RCR. Check the appropriate block and enter the latest available runway conditions (RSC/RCR) including decelerometer value if available for the destination and/or alternate in the Remarks section.

2.5.2 PMSV. Enter the Pilot-To-Metro Service (PMSV) radio frequency and/or phone patch number of the weather unit at the departure airfield. If pilot reports (PIREPs) are requested for specific areas, enter the areas in Remarks (e.g., Request PIREP DURGC, Request PIREP @BT-11).

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2.5.3 Attachments. Check the appropriate block indicating if attachments are provided with the briefing.

NFWB Note: The "Attachments" option cannot be utilized when conducting NFWB remote briefings. NFWB over the counter briefings may utilize the "Attachments" if hard copies of the DD Form 175-1 and attachments are retained locally.

2.5.4 Remarks. Enter any other significant data (e.g., data for which there was insufficient space in other blocks and/or specialized forecasts such as para-drops, refueling, etc.) As a minimum, the following is required:

2.5.4.1 Enter "Severe Weather Enroute" when severe weather is forecasted to occur along the route of flight. This remark is in addition to required entries in Part II for WW, SIGMET, CONVECTIVE SIGMET or other severe weather bulletin.

2.5.4.2 The forecaster may enter the current observation for the first destination in the remarks block also. If the first destination is currently below minimums, the observation SHALL be entered along with the remark: "Destination below minimums".

NFWB NOTE: If severe weather has been forecasted in Part II the "Severe Weather Enroute" radio button has been selected and the note "Severe Weather Enroute" automatically appears in Part IV, Remarks

2.6 Part V - Briefing Record. Provides accounting data (figure 2-6).

PART V - BRIEFING RECORD			
36. WX BRIEFED TIME 1800	37. FLIMSY BRIEFING NO. 10-029	38. FORECASTER'S INITIALS RET	39. NAME OF PERSON RECEIVING BRIEFING LCDR NOLL
40. VOID TIME 1850	41. EXTENDED TO/INITIALS	42. WX REBRIEF TIME/INITIALS	43. WX DEBRIEF TIME/INITIALS

Figure 2-6, Part V - Briefing Record

2.6.1 WX Briefed Time. Enter time UTC that the briefing was provided.

NFWB Note: The NFWB system electronically administers this application by remotely assigning the time UTC that the pilot finalizes the briefing as described in reference (j). For over the counter briefings, the time is assigned when the forecaster finalizes the briefing.

2.6.2 Flimsy Briefing Number. Enter digits indicating the month and sequential briefing number for the month. (e.g., the 28th DD Form 175-1 briefing conducted during the month of October would be displayed as 10-028).

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NFWB Note: NFWB assigns briefing numbers automatically in sequential order for each month. At 0000 UTC on the first day of each month, the month will advance and the numbers will restart at 001. An administrative application is provided in NFWB that allows the user to advance the briefing number if required prior to finalization of the briefing.

2.6.3 Forecaster's Initials. Enter the initials of the weather briefer or the forecaster preparing and disseminating the briefing.

NFWB Note: NFWB automatically inserts the forecaster's initials as determined by the forecaster login.

2.6.4 Name of Person Receiving Briefing. Enter as a minimum the Rank/Rate and last name of the person receiving the briefing. The person receiving the briefing shall be the pilot in command or a designated member of the flight crew.

NFWB Note: For remote briefings conducted using NFWB, the pilot name will automatically be inserted onto the DD Form 175-1 as determined by the pilot's submitted flight plan.

2.6.5 Void Time. Briefing void time is 30 minutes after ETD not to exceed two and one half (2.5) hours past briefing time. It is the responsibility of the pilot to obtain a re-brief if the briefing becomes void prior to departure.

U.S. ARMY Note: Add 1:30 to the "Weather Briefed" time. For Army briefings sent electronically, calculate the void time from the event (E) time. If the crew calls later for a verbal briefing, recalculate the void time from the verbal briefing time and enter the new void time after the first time (e.g., 1145Z/1205Z).

NFWB Note: NFWB electronically manages void time following the policy as stated above.

2.6.6. Extended to/Initials. When pilots request an extension, recheck all weather entries, rebrief, indicate the required changes and enter the initials of the forecaster providing the extension. Extensions follow the same rule as for void times

U.S. ARMY Note: Highlight /bold extensions of electronic, green ink entries if paper.

NFWB Note: For extensions conducted using NFWB, the pilot may make changes to the submitted flight plan prior to contacting the forecasting activity to alert the forecaster of the change. The forecaster can then update the DD Form 175-1 accordingly. This may turn into a briefing that was done with NFWB but updated in pen considering the pilot has probably finalize his brief at the time of requesting an extension.

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2.6.7 WX Rebriefed Time/Initials. Enter the time a rebriefing was completed. An entry is required whenever a forecast is updated in any manner, including a request for an extension. When a request for an extension is received, the forecaster shall review the entire DD Form 175-1 to ensure its validity and, when appropriate, make changes to the basic form and brief the pilot on those changes. If the changes to the DD Form 175-1 are considered critical or clutter the form, a new DD Form 175-1 should be completed with a new briefing number assigned in lieu of an extension or a rebrief.

NFWB Note: NFWB will not indicate the changes the forecaster makes to the briefing. Changes should be made to a hardcopy of the brief, briefed to the pilot, and retained for one year or a new NFWB should be completed.

2.6.8 WX Debrief Time/Initials. This block is not mandatory unless specifically requested by the pilot or person returning from the flight. Enter the time the aircrew debriefed and the initials of the forecaster receiving the debriefing.

NFWB Note: NFWB does not include debrief applications.

2.7 Record Keeping.

2.7.1 General. All paper DD Form 175-1s and locally prepared substitute forms (whether conducted locally or by remote means), shall be retained for a minimum of one month. The NFWB system automatically retains all briefings on file for 31 days, which fulfills the requirement to retain briefings for that period. The NFWB administrative applications provide the capability to retrieve all archived briefings and compile station statistical reports as required. Activities desiring to retain NFWB briefings locally may do so by downloading the Acrobat .pdf files for each briefing and store them. The storage media or folder should be identifiable by the start and end date as well as the briefing number sequence.

2.7.2 Over the Counter Briefings. Forecasters shall provide the person receiving the briefing with the original; NFWB will retain all briefings for station records. If done manually, the forecaster shall retain one paper copy for the in-house files. In the case of group briefings (e.g., over-the-counter or squadron ready room) for multiple aircraft flights, the forecaster shall provide sufficient copies for each aircraft.

2.7.3 Remote Briefings. The NFWB archival feature fulfills the requirement to retain the original and provide a copy to the person receiving the briefing. For remote fax, PMSV and phone briefings, the forecaster will use the in-office NFWB to complete the briefings so as to create the record. The pilot is responsible for completing a DD Form 175-1 when receiving the briefing via phone or PMSV. The forecaster must print a copy of the DD 175-1 when conducting briefings via fax. The remarks block of section V of the DD Form 175-1 shall be annotated to indicate these methods of remote briefing.

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2.7.4 Continuation Sheet. If an additional DD Form 175-1 is necessary for a continuation sheet for any portion of the briefing, enter the briefing number on the second DD Form 175-1 and annotate in the remarks block "Page 1 of 2" and "2 of 2" respectively.

2.7.5 Graphics. Graphics used in lieu of portions of the Form DD175-1 must be manually retained.

2.7.6 Locally Prepared Forms. While the use of locally prepared forms is authorized, activities must provide the same data provided by the official DD Form 175-1. When locally prepared forms are used, they shall be treated the same as the DD Form 175-1 for record keeping purposes.

2.7.7 Aircraft Accident. DD Form 175-1 briefs and the data used to prepare the brief, both paper and electronic, that relate to an aircraft accident shall be retained as long as necessary to complete any associated investigation. A copy of the brief shall be included with the accident report and retained by the Navy Safety Center.

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Chapter 3 - Instructions Governing the Preparation of U.S. Navy Flight Forecast Folder

3.1 General. A Flight Forecast Folder (CNOF 3140/25) is normally requested by pilots/flight crews when they are transiting across large continental areas or over the oceans. The graphics provided within the folder are ideal for briefing flight weather over long distances. Pilots should provide the forecasting activity adequate lead-time to prepare the folder. Reference (a) recommends a minimum of two hours advance notification. Pilots should be encouraged to turn in their Flight Forecast Folder at their destination or return mail the folder with comments regarding accuracy of mission forecast data.

3.2 NFWB Graphics. Although NFWB does not include an option to remotely provide the U.S. Navy Flight Forecast Folder (CNOF 3140/25), NFWB does provide pilots access to all the graphical products related to their route of flight via links controlled by the forecaster. Pilots can be briefed on the graphical products included in a flight folder, then instructed to print them if the pilot is remotely preparing a flight forecast folder. Since NFWB does not retain graphical products in association with specific DD Form 175-1, the forecaster shall manually save the Form DD 175-1 along with any graphical product used in preparation of such a flight folder.

3.3 Contents. The flight forecast folder shall consist of the following:

3.3.1 Minimum Contents:

- U.S. Navy Flight Forecast Folder (CNOF 3140/25).
- DD Form 175-1 Military Flight Weather Briefing form.
- Horizontal Weather Depiction (HWD) and /or Vertical Weather Depiction (VWD) charts.
- Upper Winds Charts applicable to the intended route of flight.

3.3.2 Supplemental charts when appropriate:

- Optimum Path Aircraft Routing System (OPARS) flight plan or U.S. Air Force Computer Flight Plan (CFP).
- AIRMET/SIGMET depiction.
- Current Doppler Radar depiction.
- Ditch Heading Chart for all over water flights.
- Predicted Altimeter Setting Chart for all over the water flights, or portions thereof, at altitudes of 1,500 feet or below.

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- Miscellaneous charts tailored for specific requirements.

Note: If the flight route is classified, the entire folder becomes classified and the contents must be appropriately marked.

3.4 Preparation. All base charts shall be prepared using the symbols listed on page two of the Flight Forecast Folder. A copy of the charts shall be prepared in black or dark blue to facilitate use during night flights (red lights). Individual items shall be prepared as follows:

3.4.1 U.S. Navy Flight Forecaster Folder (CNOC 3140/25). The folder is largely self-explanatory however; the following instructions are included for clarification:

3.4.1.1 The section on page one, entitled "Folder Includes" lists forms and charts that must be included in the folder. Any other items included should be checked in the "Additional Charts" section or listed in the forecaster's remarks section.

3.4.3.2 The PIREP form (page three) shall be brought to the attention of the pilot. For transoceanic flights, the use of Air Force (AF) form 72 Air Report (AIREP) is encouraged.

3.4.3.3 Page four is a self-mailer for the folder. The issuing activity shall enter its mailing address to the right of the "TO:".

3.4.2 DD Form 175-1. This form is to be completed in accordance with Chapters 1 and 2 of this manual.

3.4.3 Horizontal Weather Depiction (HWD) Charts. The HWD chart is a strip chart across a horizontal plane illustrating the forecasted significant weather (Figure 3-1) along the line of flight. Two actual charts may be created to reduce clutter as shown in figure 3-1.

3.4.3.1 Size. The HWD chart should be approximately the same size as the folder, large enough to allow legible entries, but small enough to permit easy handling within the cockpit.

3.4.3.2 Coverage. All HWDs shall at a minimum depict the atmospheric conditions from the surface and extend to 5000 feet above the proposed flight level and within 25 NM of the flight path. More coverage may be necessary to describe the significant features in more detail. Some forecasting activities may prepare or use an HWD to cover all commonly used routes. Stations that forecast for extensive geographic areas, or support missions along divergent routes, may require more than one base chart.

3.4.3.3 Valid Time. Charts shall normally be valid for the mid-time of the flight. Synoptic model charts retrieved for inclusion to the forecast folder shall be valid for synoptic times nearest the mid-time of the flight.

3.4.3.4 Required entries:

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- Areas of five-eighths or more cloudiness. Annotate with cloud coverage in eighths the base/tops of all cloud areas/type.
- All areas of cumulonimbus (CB) and towering cumulus (TCU) clouds. Annotate with cloud coverage in eighths and base/tops of each cloud area.
- The height of the freezing level above MSL depicted for 5,000-foot intervals or by at least two levels that best depict the isotherm contours.
- Fronts and pressure centers including their direction of movement and speed in knots.
- Significant weather and obstructions to vision.
- Hazards to flight (e.g., icing, turbulence, etc.)
- Proposed route of flight.

3.4.3.5 Miscellaneous. Any additional information deemed significant by the forecaster or requested by the pilot shall be entered.

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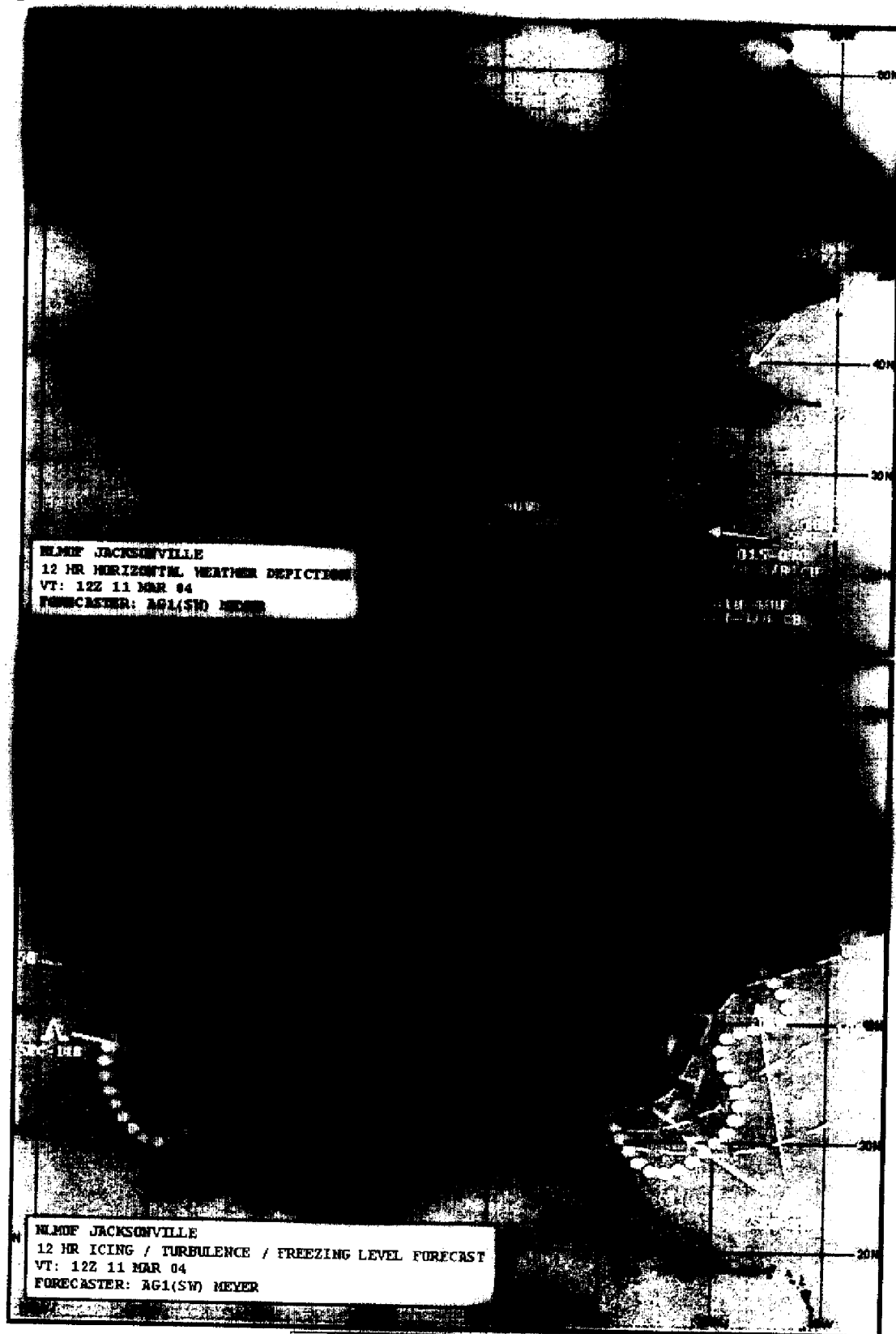


Figure 3-1 HWD

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3.4.4 Vertical Weather Depictions (VWD). The VWD is a vertical cross section through the atmosphere portraying weather along the proposed route of flight. (Figure 3-2) It is the most illustrative diagram for flight briefing, capable of showing both the vertical and horizontal extent of flight hazards along one line. Although capable of being manually produced, a variety of software allows this somewhat complex depiction to be easily made from model data. Any VWD so produced should be checked by the forecaster to verify its accuracy. Data normally included:

3.4.4.1 Size. The VWD chart should be approximately the same size as the folder.

3.4.4.2 Coverage. Since VWD are created for individual flights it must cover the entire route of the planned flight.

3.4.4.3 Valid Time. VWDS shall normally be valid for the Mid-Time of the flight but may be valid to the closest time for which model data can be retrieved.

3.4.4.4 Flight Levels. Since this is a vertical depiction, all levels up to 5000 feet above requested flight level shall be provided. Flight levels shall be labeled at least every 5,000 feet and the desired flight level drawn across the chart.

3.4.4.5 Horizontal extent. If drawn manually all weather within 25 NM of the flight path shall be illustrated.

3.4.4.6 Required entries:

- Areas of cloudiness.
- All areas of thunderstorms or CB.
- The height of the freezing level above MSL.
- Wind speed and direction at 5,000 foot increments.
- Areas of Icing and Turbulence

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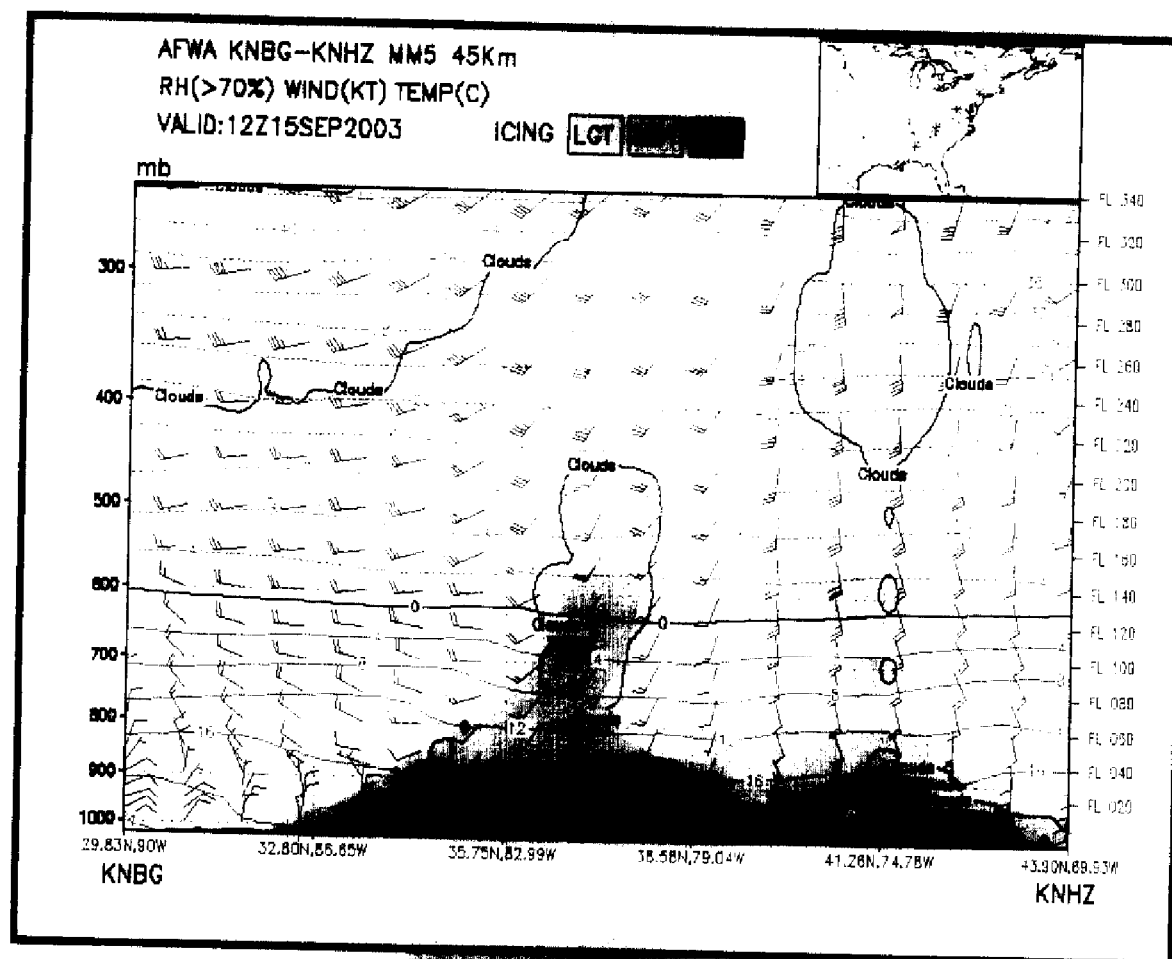


Figure 3-2, VWD

3.4.5 Upper Wind Charts. Upper wind charts should be provided from forecast data that shall verify as close as possible to the mid-time of the flight. Winds shall be displayed as wind barbs. Winds charts shall include data that is representative of upper level winds 5,000 feet above and below the proposed cruise altitude. If constant pressure charts are used, a minimum of two charts shall be used to represent wind both above and below the cruise altitude.

3.4.6 Ditch Heading Chart. A plot of the point values of predicted ditch headings (an arrow indicating direction of ditching) shall be included for all flights with significant over water portions.

3.4.7 Predicted Altimeter Setting Charts. A plot of the point values of predicted altimeter settings in inches shall be provided for all flights with significant over water portions and operating at 1,500 feet and below.

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3.4.8 Miscellaneous Charts. Any other operationally significant charts or those requested by the pilot shall be included.

3.5 Legend. All charts shall contain a legend in a conspicuous place and must contain the following:

- Title of chart.
- Valid time of chart.
- Station identification of activity issuing the flight folder.
- Folder number. (sequential by month)(i.e. 01-001 for the first folder issued in January).

3.6 Records. Copies of the Flight Forecast Folders shall be retained locally for a period of one month. In case of an aircraft mishap, the Flight Forecast Folder with all original contents shall be retained locally for as long as is necessary to complete the mishap investigation. A copy of the brief shall be included with the accident report and retained by the Navy Safety Center.

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Appendix A - Severe Weather Bulletins of Significance to Aviation

1. Weather Bulletin Identifiers. The World Meteorological Organization (WMO) manual 386 contains the tables that define the abbreviated headings for weather bulletin identification including warnings for severe weather. Although it is these official bulletin identifiers that are universally used within the aviation community to identify hazards to flight, meteorological agencies may use other identifier headers internally with various display and communication systems. For example, the National Weather Service (NWS) has additional bulletin identifiers used with its AWIDS and these bulletins are displayed at times in the public sector. The below definitions shall be utilized to standardize communication regarding bulletins of Severe Weather during briefings. Within the US, common bulletins communicating severe weather for aviation include Weather Watches (WW), SIGMETS (WS), and Convective SIGMETS (WST). Other countries use similar bulletin identifiers. These bulletin identifiers as well as some other common identifiers are defined below; those requiring a "Severe Weather Enroute" entry are identified by an *.

a. * **"WW"** is the standard bulletin identifier for a WEATHER WATCH, issued for areas where conditions are favorable for development of severe thunderstorms or tornadoes. This is the bulletin specified in reference (a). It is predictive in nature and should not be confused with tornado or severe thunderstorm warnings which are issued after the events have been visually or remotely observed.

b. * **"WU"** is the standard bulletin identifier for severe thunderstorm warning; that is the phenomena is actually occurring.

c. * **"WF"** is the standard bulletin identifier for tornado warning; that is the phenomena is actually occurring.

d. * **"WS"** is the standard identifier for most SIGMETS. These include:

1) **"WS"** (Domestic SIGMET) which refers to severe turbulence, severe icing, dust storms/sandstorms and volcanic ash.

2) **"WST"** (Convective SIGMET) which refers to line of thunderstorms, isolated severe thunderstorms, embedded thunderstorms.

The NWS distinguishes Convective SIGMETS from Domestic SIGMETS with a suffix. The alpha-numeric (e. g. 34E) suffix is for Convective SIGMETS and phonetic followed by a number (e. g. Romeo 2) suffix is for Domestic SIGMETS.

e. * **"WT"** is the standard bulletin identifier for tropical cyclone warnings.

f. * **"WV"** is the standard bulletin identifier for a volcanic ash cloud SIGMET.

g. **"WA"** is the standard bulletin identifier for AIRMETS. Although not indicative of severe weather they are issued for the following three types of hazards:

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- 1) AIRMET Tango: Light to moderate turbulence, low level wind shear, or sustained surface winds of 30 knots or more at the surface.
 - 2) AIRMET Zulu: Light to moderate icing, or freezing levels.
 - 3) AIRMET Sierra: IFR conditions (Ceilings less than 1000 ft and/or visibility less than 3 miles affecting over 50% of the area at one time), or extensive mountain obscuration.
- h. The letters "WS" and "WT" are also used by the National Weather Service - Storm Prediction Center (SPC) to help the public differentiate between Severe Thunderstorm Watch (WS) and Tornado Watch (WT). If viewing the graphic on the SPC homepage they are color-coded blue for Severe Thunderstorm Watch (WS) and red for Tornado Watch (WT). However, SPC references their "WS" and "WT" with the NWS standard identifier "WW".
- i. * International SIGMET Advises of weather potentially hazardous to all aircraft. The purpose of this information is to advise pilots of the occurrence or expected occurrence of en-route weather phenomena that may affect the safety of aircraft operations. Criteria for Domestic and International SIGMETs are similar, however the format, contractions, and wording used are different. International SIGMETs are issued for oceanic areas *Pacific* and *Atlantic* adjacent to the United States by a Meteorological Watch Office (MWO). The National Weather Service has MWOs at Anchorage, AK; Guam Island in the Pacific Ocean; Honolulu, HI; and the Aviation Weather Center in Kansas City, MO.
- j. International SIGMET criteria:
- 1) Thunderstorms
 - 2) Lines of thunderstorms
 - 3) Embedded thunderstorms
 - 4) Large areas of thunderstorms
 - 5) Large hail
 - 6) Tropical cyclone
 - 7) Severe icing
 - 8) Severe or extreme turbulence
 - 9) Duststorms and sandstorms lowering visibility's to less than three (3) miles
 - 10) Volcanic Ash

These SIGMET items are considered widespread because they must be affecting, or be forecasted to affect, an area of at least 3000 square miles at any one time. International SIGMETs are issued for 12-hour periods for volcanic ash events, 6 hours for hurricanes and tropical storms and 4 hours for all other criteria. If conditions persist beyond the forecast period, the SIGMET is updated and reissued.

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Appendix B - Terms and Abbreviations

1. The following is a list of terms and acronyms and their definitions as used in this document:

A/C	Aircraft
AFWA	Air Force Weather Agency
AGL	Above Ground Level
AIRMET	Airman's Meteorological Information
AIREP	Air Report
ALTN	Alternate
AMOCC	Air Mobility Operations Control Center
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
BUNO	Bureau Number
CFP	Computer Flight Plan
DEST	Destination
DoD	Department of Defense
DTG	Date Time Group
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
FAA	Federal Aviation Administration
FAX	Facsimile
FDO	Forecast Duty Officer
HWD	Horizontal Weather Depiction
ICAO	International Civil Aviation Organization
ID	Identification/Identifier
IFR	Instrument Flight Rules
MAJCOM	Major Command (USAF)
METAR	Meteorological Terminal Aviation Routine Weather Report
METOC	Meteorology and Oceanography
MSL	Mean Sea Level
NATOPS	Naval Air Training & Operating Procedure & Standard
NFWB	Naval Flight Weather Briefer
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
OPARS	Optimum Path Aircraft Routing System
OWS	Operational Weather Squadron
PIREP	Pilot Report
PMSV	Pilot-To-Meteorological Service Voice
PROB	Probability of occurrence of a phenomena expressed as a percent
RSC/RCR	Runway Surface Condition / Runway Condition Reading
SFC	Surface
SIGMET	Significant Meteorological Information
SM	Statute Miles
TACC	Tactical Air Control/Command Center

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TAF	Terminal Aerodrome Forecast
TEMPO	Temporary
UTC	Universal Time Coordinate
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VRB	Variable
WW	Weather Watch (refers to severe thunderstorm watch or tornado watch)
WX	Weather

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Appendix C - References

- OPNAVINST 3710.7(T), NATOPS General Flight and Operating Instructions
- (b) NAVMETOCCOMINST 3141.2(A), Surface METAR Observation Procedures U.S.
 - (c) NAVMETOCCOMINST 3143.1(G), Aerodrome Forecasts
 - (d) U.S. Department of Transportation, Federal Aviation Administration, 7340.1 Contractions Handbook
 - (e) Department of Transportation, Federal Aviation Administration, 7350, Location Identifiers
 - (f) International Civil Aviation Organization (ICAO) DOC, 7910 Location Indicators
 - (g) World Meteorological Organization (WMO) Codes Manual 386
 - (h) AFI 11-202V3, General Flight Rules
 - (i) Army Regulation 95-1, Flight Regulations
 - (j) NAVOCEANO NFWB-UG-04-01 - Naval Flight Weather Briefer User's Guide